原文：Superrotation of cosmic material structure and astrophysical chemistry 2024v4.1 global multilingual electronic e-book

●这是一系列非常深奥且复杂的宇宙学问题。关于宇宙中的化学元素是否存在未被发现的遗漏，目前科学家们仍在持续探索中。虽然已知的元素已经很多，但随着观测技术和实验手段的不断进步，不排除存在尚未发现的元素。对于基本粒子夸克，同样有可能存在未被发现的类型或特性。科学研究是一个不断推进和发展的过程，新的发现可能会改变我们对夸克的现有认知。宇宙中各种天体和物质的数量极其庞大，要理出详细的图表数据是一项极其艰巨的任务，目前的科学研究还无法提供完整和精确的统计。对于宇宙的物质总量和总动力估计值，目前的科学理论也难以给出确切的数值。宇宙中的物质和能量分布极为复杂，并且存在着许多未知的因素。在数学上描述宇宙的无穷大，通常会用到一些数学模型和理论，比如广义相对论中的时空弯曲概念等，但要详细推导无穷大的数学公式并非简单的事情，这涉及到高深的数学和物理知识。宇宙大爆炸理论是目前被广泛接受的宇宙起源理论，但它也并非完美无缺，仍存在一些尚未解决的问题和争议。例如奇点的本质、早期宇宙的量子涨落等。人类对宇宙的理解确实还处于不断探索和完善的阶段，需要更多的科学研究和技术发展来揭示宇宙的奥秘。总的来说，宇宙学是一个充满挑战和未知的领域，每一个新的发现都可能颠覆我们的既有认知，一、元素与基本粒子的探索

边界（1）化学元素周期表目前确认元素至118号（Og），其中1-94号自然存在，95号以上为人工合成理论预测存在"稳定岛"（约质子数114-126区间），但尚未证实（2）夸克层面的研究标准模型确认6种夸克（上下、粲奇、顶底）均已通过实验验证理论扩展方向：超对称理论预测超对称伙伴粒子前子模型提出夸克可能存在亚结构第五种基本力相关粒子假说二、宇宙物质构成量化模型（按WMAP+普朗克卫星最新数据） 三、数学无穷大的物理建模（1）宇宙尺度参数化共形循环宇宙学：采用共形映射将无限时空压缩为有限参数空间弗里德曼方程解： $a(t) \propto e^{Ht} \quad (\Lambda$主导时) 当$t\infty$，尺度因子a呈指数发散（2）物质密度重整化引入截断函数处理发散积分： \…

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● It's a very profound and complex set of cosmological questions. Scientists are still exploring whether there are undiscovered missing chemical elements in the universe. Although there are already many known elements, with the continuous progress of observation techniques and experimental means, it is not ruled out that there are elements that have not yet been discovered. For elementary particle quarks, it is also possible that there are undiscovered types or properties. Scientific research is a process of continuous advancement and development, and new discoveries may change

our current understanding of quarks. The number of various celestial bodies and substances in the universe is extremely large, and it is an extremely difficult task to analyze detailed chart data. Currently, scientific research cannot provide complete and accurate statistics. For the total amount of matter and total dynamic estimates of the universe, the current scientific theory is also difficult to give exact values. The distribution of matter and energy in the universe is extremely complex, and there are many unknown factors. To describe the infinity of the universe mathematically, mathematical models and theories are usually used, such as the concept of space-time bending in general relativity. However, deducing the mathematical formula of infinity in detail is not a simple matter, as it involves advanced mathematical and physical knowledge. The Big Bang theory is currently widely accepted as the theory of the origin of the universe, but it is not perfect, and there are still some unresolved issues and disputes. For example, the nature of Singularity, the quantum fluctuations of the early universe, and so on. Humankind's understanding of the universe is still in the stage of exploration and improvement, and more scientific research and technological development are needed to reveal its mysteries. Overall, cosmology is a challenging and unknown field, and every new discovery may overturn our existing understanding. 1. Exploration of the boundaries of elements and elementary particles (1) The periodic table of chemical elements currently confirms elements to 118 (Og). Among them, numbers 1 to 94 naturally exist, and numbers 95 and above are predicted to exist by artificial synthesis theory as "stable islands" (about the range of proton numbers 114 to 126). However, it has not been confirmed that (2) The standard model of quark-level research confirms that all six types of quarks (upper and lower, cannqi, top and bottom) have been experimentally verified in the theoretical expansion direction: Supersymmetry theory predicts supersymmetry partner particle

precursor model, proposes the fifth fundamental force-related particle hypothesis that quarks may have substructures. 2. Quantitative model of cosmic matter composition (according to the latest data from WMAP+ Planck satellite). 3. Physical modeling of mathematical infinity (1) Cosmic scale parameterization. Conformal cyclic cosmology: The infinite space-time is compressed into a finite parameter space Friedman equation solution using a conformal mapping: a (t) \propto e^ {Ht}\quad (when dominates) When t ∞, the scale factor a is exponentially divergent (2) The density renormalization of matter introduces a truncation function to deal with divergent integrals:

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